

## **REMARKS/ARGUMENTS**

Applicant has received the Office Action dated May 5, 2008, in which the Examiner: 1) rejected claims 1-3, 7, 9-10 and 12-17 under 35 U.S.C. § 103(a) as allegedly obvious under Sawada et al. (U.S. Pat. No. 6,907,470, hereinafter "Sawada") in view of Ball et al. (U.S. Pub. No. 20030046390, hereinafter "Ball") and Futernik (U.S. Pat. No. 7,075,886, hereinafter "Futernik"); and 2) rejected claims 4-6, 8 and 11 as allegedly obvious under Sawada in view of Ball and Futernik and further in view of Kao et al. (U.S. Pat. No. 7,054,951, hereinafter "Kao"). Based on the arguments herein, Applicant respectfully submits that all pending claims are in condition for allowance.

### **I. CLAIMS 1-6**

#### **A. Sawada, Ball and Futernik Fail to Teach All Claim Limitations**

Independent claim 1 requires that the "configuration validation checker causes the switch to change its routing behavior with regard to a port for which a link up/down detection unit has detected a state change." The combination of Sawada, Ball and Futernik fails to teach or even suggest such a limitation. The Examiner admits that Sawada and Ball fail to teach this limitation and, as a result, turns to Futernik. Office Action, p. 4. The Examiner asserts that Futernik teaches this limitation at col. 12, ll. 15-64. *Id.* Applicant respectfully submits that the Examiner is mistaken. Applicant points out that Futernik teaches a change in routing behavior based on **predictions**, not actual detections, as required by claim 1.

Specifically, Futernik states that "[t]he topology prediction function was configured in the simulation to inhibit neighbor packets via the packet filter approximately six seconds prior to a crosslink 18 becoming disabled." Col. 11, ll. 42-45. Thus, Futernik teaches that neighbor packets are inhibited when it is **predicted** that a crosslink will become disabled. In contrast to claim 1, however, Futernik does **not** teach that neighbor packets are inhibited based on an actual **detection** of a crosslink becoming disabled. Futernik confirms Applicant's assertion by stating that "[t]he present invention utilizes knowledge of the known satellite movements and topology changes to inhibit transmission and reception

of those packets **prior to a route becoming disabled**" (emphasis added). Col. 1, ll. 50-55. Futernik goes on to conclude that "[t]hus, new routes are determined by the protocol **prior to the previous routes becoming disabled due to a topology change**" (emphasis added). Col. 1, ll. 55-57. Thus, again, while claim 1 requires a change in routing behavior as a result of an actual detection of state change, Futernik teaches the change of routing behavior based on mere predictions.

Detection, as claimed, is not obvious in light of Futernik's prediction technique at least because actual detection is not subject to the errors and inaccuracies that may be associated with prediction. Applicant's detection technique ensures that an actual state change has occurred before going through the time and computational expense associated with altering routing behavior.

Based on the foregoing, claims 1-6 are patentable over the combination of Sawada, Ball and Futernik.

**B. Modifying Futernik to Teach Detection is Impermissible Because Futernik's Principle of Operation is Modified and the Modification Would Render Futernik Unsatisfactory for its Intended Purpose**

The Examiner may argue that although Futernik teaches prediction of disablement instead of detection of disablement, the difference between the two is negligible. Applicant respectfully points out to the Examiner that such reasoning violates MPEP §§ 2143.01(VI) and (V).

MPEP § 2143.01(VI) declares that, "if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." Modifying Futernik to teach detection (per Applicant's claims) instead of prediction (what Futernik teaches) would require impermissibly changing Futernik's principle of operation. More specifically, Futernik's Discussion of Related Art names multiple patents that provide "various systems that determine alternative routes based on modifications to the network topology." Col. 1, ll. 63-65. Futernik discredits these patents and proposes a solution to the deficiencies of the patents. Col. 2, ll. 49-66. In particular, Futernik

states that “[t]he present invention basically overcomes the aforementioned problems by ... recomputing routes **prior to a known change in network topology**” (emphasis added). *Id.* The remainder of Futernik explains how such predictive re-routing is accomplished.

Thus, Futernik’s ability to alter routes based on **predictions** is what distinguishes it from the prior art. It would be both reasonable and accurate, then, to assert that this predictive route alteration constitutes Futernik’s principle of operation. Modifying Futernik with route alteration upon **detection** (as required by claim 1 and as discredited by Futernik) instead of **prediction** (Futernik’s principle of operation) violates MPEP § 2143.01(VI), because such a modification would change Futernik’s principle of operation. One of ordinary skill in the art would not be motivated to modify Futernik to teach detection when Futernik’s principle of operation quite clearly is prediction.

MPEP § 2143.01(V) declares that “if proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.” Modifying Futernik to teach detection instead of prediction would render Futernik unsatisfactory for its intended purpose. As explained above, Futernik in the Discussion of Related Art section disparages prior art systems that change routes based on actual modifications to the network topology. Futernik presents itself as superior to this prior art precisely because it uses predictions, not actual modifications, as a basis for altering routes. Thus, Futernik’s intended purpose can fairly and accurately be said to include the use of prediction and not detection. Therefore, altering Futernik to teach detection instead of prediction would impermissibly render it unsatisfactory for its intended purpose, in direct violation of MPEP § 2143.01(V).

Thus, based on the foregoing, modifying Futernik to alter routes based on **detected** network changes instead of **predicted** network changes would violate MPEP §§ 2143.01(VI) and (V). The Examiner should not make such a modification in subsequent Office Actions (if any) to reject any of the claims.

**C. Dependent Claim 2**

Dependent claim 2 is patentable for an additional reason. In particular, claim 2 requires “wherein each link up/down detection logic unit informs the configuration validation checker when a link to an associated port becomes non-functional, and the configuration validation checker responds by discarding all packets.” The combination of Sawada, Ball and Futernik fails to teach this limitation. The Examiner asserts that Sawada teaches this limitation at col. 1, l. 65 – col. 2, l. 21. The Examiner is mistaken. Although this portion of Sawada teaches the discarding of packets (*e.g.*, col. 2, l. 9), it does **not** teach that this discarding is **in response to** a configuration validation checker being informed when a “link to an associated port becomes non-functional,” as required by claim 2. Ball and Futernik fail to satisfy the deficiencies of Sawada. Thus, claim 2 is patentable for this additional reason.

**D. Dependent Claim 3**

Dependent claim 3 is patentable for an additional reason. Specifically, claim 3 requires “wherein each link up/down detection logic unit informs the configuration validation checker when a link to an associated port becomes non-functional, and the configuration validation checker responds by discarding all packets destined to that link.” The combination of Sawada, Ball and Futernik fails to teach this limitation. The Examiner asserts that Sawada teaches this limitation at col. 11, ll. 33-48. The Examiner is mistaken. Although this portion of Sawada does teach the discarding of packets (col. 11, l. 35 and l. 42), it does **not** teach that this discarding is **in response to** a configuration validation checker being informed of a “link to an associated port becom[ing] non-functional,” as required by claim 3. Ball and Futernik fail to satisfy the deficiencies of Sawada. Thus, claim 3 is patentable for this additional reason.

**II. CLAIMS 7-9**

Independent claim 7 requires “means for causing the switch to change its routing behavior with regard to a port for which a link up/down detection unit has detected a state change.” As explained above with regard to independent claim 1, the combination of Sawada, Ball and Futernik fails to teach or suggest such a

limitation. Thus, claims 7-9 are patentable over the combination of Sawada, Ball and Futernik.

### **III. CLAIMS 10-12**

#### **A. Independent Claim 10**

Independent claim 10 requires “configuration validation checker causes the switch to change its routing behavior with regard to the port if the link up/down detection unit has detected a state change.” As explained above with regard to independent claim 1, the combination of Sawada, Ball and Futernik fails to teach or suggest such a limitation. Thus, claims 10-12 are patentable over the combination of Sawada, Ball and Futernik.

#### **B. Dependent Claim 11**

Dependent claim 11 is patentable for an additional reason. Specifically, claim 11 requires “wherein the link up/down detection logic unit informs the configuration validation checker when the link becomes non-functional, and the configuration validation checker responds by rejecting all packets.” As explained above with reference to claim 2, the combination of Sawada, Ball and Futernik fails to teach or even suggest such a limitation. Kao fails to satisfy the deficiencies of Sawada, Ball and Futernik. Thus, claim 11 is patentable over the combination of Sawada, Ball, Futernik and Kao.

#### **C. Dependent Claim 12**

Dependent claim 12 is patentable for an additional reason. In particular, claim 12 requires “a plurality of ports and a link up/down detection logic associated with each port, and wherein each link up/down detection logic unit informs the configuration validation checker when a link to an associated port becomes non-functional, and the configuration validation checker responds by rejecting all packets destined to that link.” As explained above with regard to claim 3, the combination of Sawada, Ball and Futernik fails to teach or even suggest such a limitation. Thus, claim 12 is patentable over the combination of Sawada, Ball and Futernik.

#### **IV. CLAIMS 13-17**

##### **A. Independent Claim 13**

Independent claim 13 requires “the switch detecting a link down event associated with said switch or a link up event associated with said switch” (emphasis added). Claim 13 also requires “the switch determining if said packet is to be routed out through said port associated with the detected link down event or link up event” (emphasis added). Claim 13 further requires “if the switch determines that the packet is to be routed out through said port associated with a detected link down event, the switch discarding the packet” (emphasis added). Claim 13 still further requires “if the switch determines that the packet is to be routed out through said port associated with a detected link up event, the switch routing the packet through said port” (emphasis added). As explained above with respect to claim 1, the combination of Sawada, Ball and Futernik fails to teach or even suggest such limitations. Thus, claims 13-17 are patentable over the combination of Sawada, Ball and Futernik.

##### **B. Dependent Claim 14**

Dependent claim 14 is patentable for an additional reason. Specifically, claim 14 requires “further including if the switch determines that the packet is to be routed out through said port associated with a detected link down event, discarding all packets received by the switch.” As explained above with regard to claim 3, the combination of Sawada, Ball and Futernik fails to teach or even suggest such a limitation. Thus, claim 14 is patentable for this additional reason.

#### **V. CONCLUSION**

In the course of the foregoing discussions, Applicant may have at times referred to claim limitations in shorthand fashion, or may have focused on a particular claim element. This discussion should not be interpreted to mean that the other limitations can be ignored or dismissed. The claims must be viewed as a whole, and each limitation of the claims must be considered when determining the patentability of the claims. Moreover, it should be understood that there may be other distinctions between the claims and the cited art which have yet to be raised, but which may be raised in the future.

**Appl. No. 10/694,323**  
**Amdt. dated August 5, 2008**  
**Reply to Office Action of May 5, 2008**

Applicant respectfully requests reconsideration and that a timely Notice of Allowance be issued in this case. It is believed that no extensions of time or fees are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required (including fees for net addition of claims) are hereby authorized to be charged to Hewlett-Packard Development Company's Deposit Account No. 08-2025.

Respectfully submitted,

/Nick P. Patel/

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